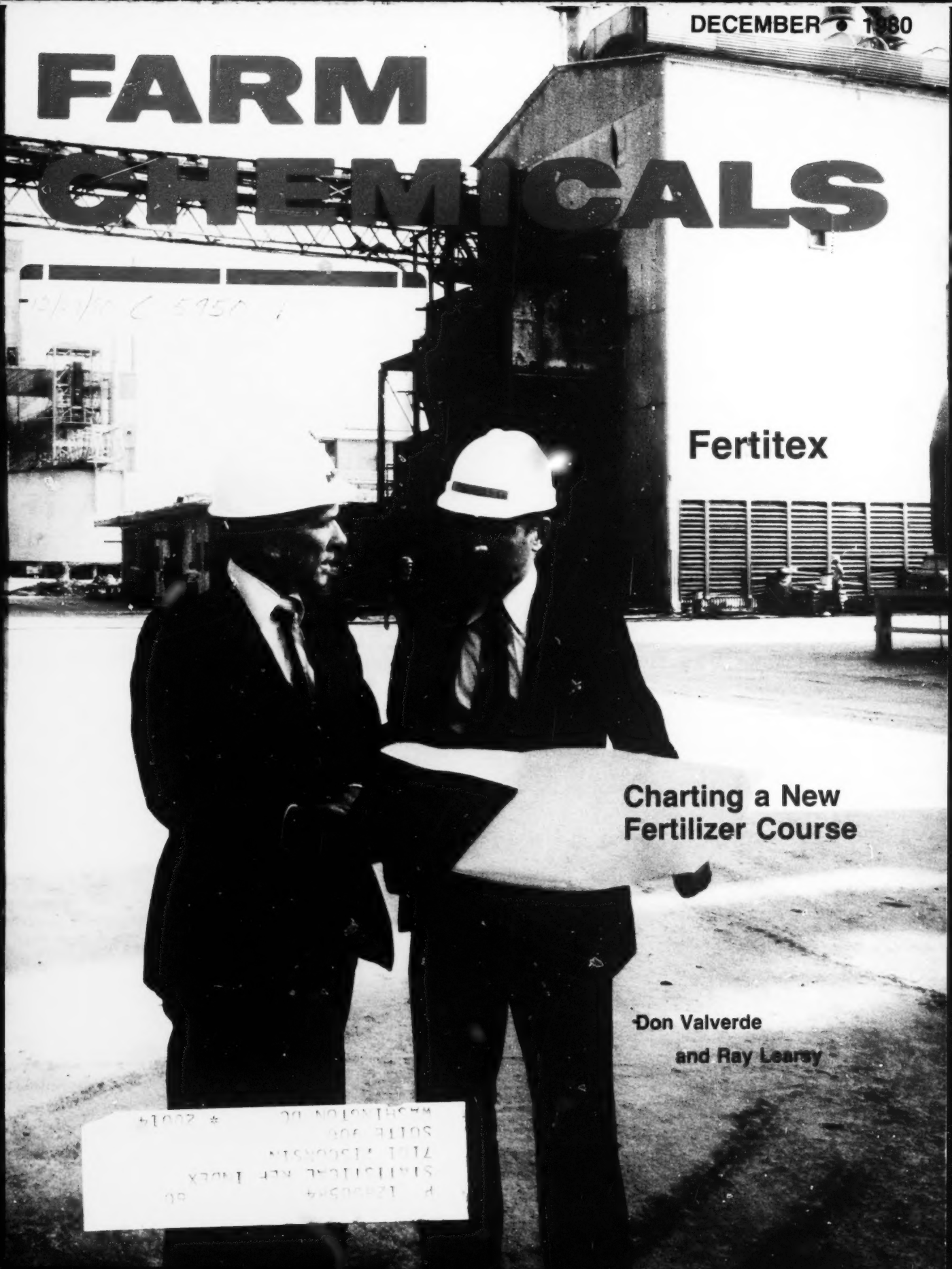
DECEMBER • 1980

# FARM CHEMICALS



## Fertitex

## Charting a New Fertilizer Course

Don Valverde
and Ray Learsy

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Vol. 143 No. 12 December 1980

# FARM CHEMICALS

CROPLIFE and AG CHEM & COMMERCIAL FERTILIZER


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## COVER STORY

From a "touch and go" beginning in 1977, the Fertilizer Company of Texas (Fertitex) has since more than tripled its sales. The reason, according to founders Ray Learsy and Don Valverde, is that "we will do things other companies just won't do" for fertilizer customers. For the complete story on this "fertilizer supermarket", turn to page 13.


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# Spray or Mow . . . Which Way to Go?

**There are over 23 million acres of highway right of way in the U.S. In response to an FC survey, 36 states tell how they manage their roadsides and how much it costs.**

ROADSIDE weeds — just how big is the market for chemical control of this problem? How do various states take care of their roadsides, and how many acres and miles are involved? To find the answers FC surveyed the 50 states recently. Of the 36 states that responded, 32 reported spending the total of $61,609,940 annually on eliminating weed problems along their highways. A total of 1,137,945 acres and 97,799 miles were being cared for in 33 of the states.

In addition, 18 of the major chemical companies responded to a companion survey by enumerating the products they market for roadside care as well as some new products that will be available.

Richard W. Gray, Jr., agronomist with Nebraska's department of roads, emphasizes, "Not all weeds are bad — only the plants out of place. Weeds pioneer some soil where grass would fail and protect the soil from erosion until a permanent vegetation is established."

The weeds that are "out of place" are controlled through a variety of methods, usually mechanical and/or chemical. The theories about how to manage weeds range to both extremes, although most states combine the two methods and some add cultural and biological means.

The area considered as right of way in the U. S. (for highways, railroads, pipelines, and electric utilities)

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amounts to over 34.2 million acres, roughly the size of Arkansas. Of the total, 24.3 million acres belong to highways, 5.1 million to electric utilities, 3.4 million to pipelines, and 2.4 million to railroads. Over half, 18.2 million acres or an area a little larger than West Virginia, are in potential danger of developing woody vegetation problems.

For railroads the area requiring care usually averages 25 feet from both sides of the track, with about 9 feet between track centers in the case of double track. The right of way for a highway may be as wide as 300 feet on the interstate systems, narrowing down in and near cities and towns. To convert this into acreage, as some companies and states prefer, consider a swath 8 feet wide by a mile long as equivalent to an acre.

"That's a lot of weeds to worry about, and we can't keep up by just mowing," points out a maintenance director from the U. S. Department of Transportation. "Some areas of the country have real problems. Trees actually spring up alongside the road and heave the concrete. We can't always have the crews out there as often as we should to keep the vegetation chopped down."

As far as the departments responsible for state-controlled roadsides are concerned, opinions about what is best to do vary. In Kansas "extensive use of chemicals for weed control has never been a practice," and noxious weeds are treated on the county rather than on the state level. Conversely, in Kentucky the feeling is that "mechanical mowing is not considered to be an effective means of controlling weeds," and only chemical methods are employed.

Over the long haul chemical means are far more economical. Whether the state departments of highways and or transportation do the actual work themselves, as most do, or place the jobs on bid to independent contractors, cost of mechanical control is considerable.

"Data collected by Texas A & M and our company indicates approximately 30% savings by using chemicals for Bermuda release compared to mechanical control, and the results are better," says William B. Parker, product development manager for Crystal Chemical Co. (Parker estimates his company's products are used on 500,000 acres of railroad and roadway right of way each year, either alone or in combination with a soil residual herbicide.)

A sales representative for Vertac Chemical Corp., William Fowlkes, Jr. points out, "Mechanical control estimates range as high as 10 times the cost of control with 2,4,5-T."

William Bertges, product manager-marketing at Velsicol Chemical Co., reports, "For broadleaf weed and brush control, our products cost $7.50 to $50 per acre, depending upon target species, application equipment, application techniques, and timing of application, versus mechanical control from $20 to $50 per acre."

Looking to the future, several of the companies and states feel that any significant changes in methods of control may be away from the lower cost chemical control unless the public is better informed on how chemicals are used safely in current programs.

## Public Pressure?

The U. S. Department of Transportation maintenance director admits that his department used to spray 2,4-D, which successfully controlled problems along the interstate highways, until "one lady complained that we were spoiling her environment, and we were told to stop."

Some efforts are being made by highway and transportation department officials to inform officials and politicians about the cheaper cost of chemicals, but not all programs are aimed at the general public.

T. L. Cain, maintenance engineer with the Alabama Highway Department, explains that complaints about spraying have been few, probably because his department has been able to "restrict brownout to a minimum and avoid claims due to drift damage." He adds that there is no formal program for public education, but they do take "before and after" photos and develop a cost analysis of mowing and herbicide treatments to illustrate comparative costs.

Iowa reports pressure "only in isolated areas," while Minnesota has experienced "some discussion on non-chemical methods but no real pressure."

Oregon reports some public pressure, "but nothing as bad as the forest industry is receiving," says agronomist Joe Hay of the department of transportation's highway division. He adds that under the circumstances a public information program would only draw more attention to the use of chemicals. Until the furor with the forest industry dies down, his department will direct its information to the governor and the legislature "so that pesticide use will not be restricted or eliminated." Several other states agree with this approach.

Because of some public pressure, New York state is "trying to restrict use of chemicals to those areas where we feel we really need to use them, for example, soil sterilant under guard rails," explains highway maintenance director George Russell.

North Carolina has been under pressure to discontinue use of "restricted use of 'newsworthy' chemicals like 2,4,5-T, Tordon, etc.," says E. F. Vernon, section engineer for landscape field services in the department of transportation's division of highways.

A booklet on pesticide safety written by the Maine Department of Transportation has been "very well received," says landscape architect Clyde Walton. The booklet, designed as an educational program for the layman to counteract adverse publicity the department's spray program had been receiving, explains what methods are used along the highways and why chemicals are essential.

A few other states report mild public reaction, usually against the use of phenoxy herbicides.

Pennsylvania and Idaho answer criticism on an individual basis through the use of statistics, and Illinois has "no real program" but emphasizes that "the control of noxious weeds is required by state law."

Virginia also uses the individual approach, meeting "with persons who object to spraying near their properties and pointing out the comparative cost and effectiveness of chemical versus mechanical control," explains R. L. Hundley, environmental quality engineer for the department of highways and transportation.

Director of the roadside services division of West Virginia's department of highways, Darrell L. Buttrick reports that his state is presently developing a "comprehensive vegetation control program." In the process, they have discovered that "public reaction to the use of brush control chemical application" is reduced when the public is convinced how safe chemicals are.

## Outlook Steady to Good

Many of the chemical companies believe that their product sales for roadside use will continue at the present level. A few are more optimistic.

Elanco Co. and Monsanto Agricultural Products Co. feel that higher mowing costs due to increased labor and equipment costs will cause states to consider increasing chemical controls. Rhone-Poulenc Chemical Co. anticipates its sales will increase at least 2 - 4% for this reason.

Even if the total amount of area to be tended does not increase, the potential is there for chemical sales to increase a tremendous amount. The easiest, surest, most efficient way to control weeds, brush, and trees on all rights of way is chemical, most experts agree. The main problem seems to be how to convince the bureaucracy. FC

See page 29 and 30 for state-by-state listing of control methods and products.



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# HOW STATES CONTROL ROADSIDE WEEDS

| State | Control Methods | Chemicals | Area | Investment | % Chemical |
|---|---|---|---|---|---|
| Alabama | mechanical, chemical | MSMA, 2,4-D, Krenite, Tordon 101, Krovar I, Hyvar XL | 85,000 acres | $4.5 million | 22 |
| Alaska | mechanical | none | 250 acres | $35,000 | 0 |
| Arizona | mechanical, chemical | Phytar 560, Surflan 75W, Rad-E-Cate, Ureabor, Roundup, Weedone, Krovar, Hyvar X, Spike, Primatol | 3748 acres | $380,000 | 25 |
| Arkansas | mechanical, chemical | MSMA, prometone, simazine, diuron, maleic hydrazide, Roundup, Krenite | 90,000 acres | $4.5 million | 11 |
| California | mechanical, chemical, manual | princep, Karmex, Roundup, Krenite, diquat | 39,879 miles | $5.5 million | 50 |
| Delaware | mechanical, chemical | 2,4-D, princep, Surflan, Roundup, Krenite, Devrinol, Ronstar, Asulox | 8974 acres | $478,000 | 12 |
| Florida | mechanical, chemical, manual | 2,4-D, dicamba, ammonium sulfamate, diquat, dalapon, Roundup, Asulox, Velpar | 13,000 miles | NA | NA |
| Georgia | mechanical, chemical | MSMA, bromacil, paraquat, Roundup | 447,500 acres | $4.8 million | 9.5 |
| Idaho | mechanical, chemical, cultural, biological | Roundup, Tordon, Amdon, Fenavar, Weedar 64A, Formula 40, Brominal, Buctril, Banvil 4 W.S., Nalco-trol, Nutra-sol | 20,000 acres | $600,000 | 40 |
| Illinois | mechanical, chemical | 2,4-D amine salt and dicamba mixture | 23,000 acres | $270,000 | NA |
| Indiana | mechanical, chemical | dicamba, 2,4-D, MCPA, Tordon, Roundup, Velpar | 31,500 acres, 5000 miles | $3.14 million | 33 |
| Iowa | mechanical, chemical | 2,4-D, Trimec, Banvel | 4000 acres | $1.5 million | 20 |
| Kansas | mechanical, chemical | NA | NA | NA | NA |
| Kentucky | chemical | 2,4-D, MSMA, Roundup, Krenite, Amizine | 34,200 acres | $853,000 | 100 |
| Maine | chemical, manual | Banvel, Tordon, Krenite, Krovar I, Hyvar X, Spike 5G, Urox, Dowpon C, Roundup | 28,000 miles | $302,270 | 57 |
| Maryland | mechanical, chemical | 2,4-D, Amitrol T, dalapon | 12,000 acres | $222,000 | 95 |
| Massachusetts | mechanical, chemical | diuron, Weedazol, Fenavar, Dowpon C, amino triazole | 1000 miles | $700,000 | 25 |
| Minnesota | mechanical, chemical, manual, cultural, biological | 2,4-D, 2,4-DP, picloram, AMS, monuron TCA, bromacil, Tandex, simazine, diuron | 13,000 acres | $4.77 million | NA |
| Mississippi | mechanical, chemical | Ureabor, Hyvar XL, Primatol 25-E, Banvel, Roundup, Velpar, Ammate X, Amizine, Lorox, Krenite, Maintain CF-125, MSMA | 225,000 acres | $3 million | 15 |
| Missouri | mechanical, chemical | 2,4-D, diquat, MSMA, Krenite, dalapon, Karmex, Banvel pellets, Dacthal, Spike, Velpar, Ammate | 19,000 acres (chemical) | $7.5 million | 8 |
| Montana | mechanical, chemical | 2,4-D, simazine, Roundup | 9149 miles | $643,000 | 45 |
| Nebraska | chemical, manual | 2,4-D, Trimec, Banvel, Pramitol, Spike, Tordon, Phytar 560 | 1500 miles | $150,000 | 95 |
| New Hampshire | mechanical | none except on experimental basis | 4150 miles | $750,000 | 0 |
| New York | mechanical, chemical | Weedone, amino triazole, simazine | 20,000 miles | $1.4 million | 15 |
| North Carolina | mechanical, chemical, manual | 2,4-D, dicamba, Garlon 3A, MCPP, 2,4-D amine, Roundup, simazine/Surflan tank mix, Treflan, Dowpon C, Spike, Pramitol, diuron | 9000 acres, 2000 miles | $6 million | 10 or less |
| Ohio | mechanical, chemical | 2,4-D, Krenite, Tordon Beads | 1000 miles | $3.75 million | 13 |
| Oklahoma | mechanical, chemical, biological | DSMA, MSMA, Roundup, AAtrex 4L, Spike, Surflan, Primatol, Velpar, Hyvar X, Banvel XP, Tordon | 55,000 acres | $2.1 million | 29 |
| Oregon | mechanical, chemical, biological | Princep, Atratol, Karmex, Krovar, fenac, Embark, Trimec, amitrole, Casoron, 2,4-D, Weedone 170, Dowpon, Kerb, Roundup, Krenite, Tordon, Spike | 18,300 acres | $605,000 | 95 |

(Continued on page 30)



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## HOW STATES CONTROL ROADSIDE WEEDS (continued)

| State | Control Methods | Chemicals | Area | Investment | % Chemical |
|---|---|---|---|---|---|
| Pennsylvania | mechanical, chemical, biological | 2,4-D, picloram, Krenite, Banvel, Roundup, Brominal, Asulox, Weedone 170, Karmex, Princep 80 W, Telvar, Amizine, Velpar | 20,000 acres | $2 million | 50 |
| South Dakota | mechanical, chemical | 2,4-D, picloram, bromacil, monuron, prometon, Roundup | 18,000 acres | $153,670 | 88.5 |
| Utah | mechanical, chemical | atrazine, Amizol, Tordon, Igran, Banvel, Roundup, 2,4-D | 20,000 acres | $230,000 | NA |
| Vermont | chemical | Hyvar XL, Krenite | 1500 miles | $39,000 | 40 |
| Virginia | mechanical, chemical | 2,4-D, dicamba, maleic hydrazide, Krenite, Roundup | NA | NA | NA |
| Wisconsin | mechanical, chemical | 2,4-D, Banvel, Tordon Beads | 11,500 miles | $100,000 | NA |
| Wyoming | mechanical, chemical | 2,4-D, Banvel, Hyvar XL, Pramitol, Tordon | 3500 acres | $542,000 | 28 |

[1]NA indicates that the information was not available at this time.

## SOME PRODUCTS AVAILABLE FOR WEED CONTROL

| Company | Products | New Products | Projected Sales[1] |
|---|---|---|---|
| American Cyanamid Co. | Amino Triazole Weedkiller 90, Cytrol Amitrole-T Liquid Weedkiller | NA[2] | Steady |
| Chevron Chemical Co. | Ortho Paraquat CL, Ortho Diquat 2, Chevron Industrial Weed & Grass Killer | Several new numbered compounds, one for grass and one for general use | Up |
| Ciba-Geigy Corp. | AAtrex, Princep, Pramitol | NA | About the same |
| Crystal Chemical Co. | Mesamate Concentrate, Mesamate 600, Broadside, Phytar 560 | Working with other companies on new tank mixes | Expects great increase in all but railroad use |
| Diamond Shamrock Corp. | 2,4-D, MSMA, dalapon | Will be investigating MCPP and 2,4-DP in certain markets | Stay the same; maybe slow decline |
| Dow Chemical U.S.A. | Tordon, Vertan, DMA-4 | Garlon 3A registered in 1979—3 lb. active ingredient gallon amine formulation of triclopyo miscible in water | Up |
| Elanco Products Co. | Spike, Surflan 75W | New EPA clearances for Spike 80W in banded and spot gun applications have been granted; new tank mix labels expected soon for Spike | Up because of increased labor and equipment costs |
| Guth Corp. | Lithate 2,4-D | NA | NA |
| Hopkins Agricultural Chemical Co. | Urox | Dozer being introduced in 1980; looking for formulations that will work as basal treatments without use of oil as diluent | Up due to suspension of 2,4,5-T |
| Mobay Chemical Corp. | NA | Ustilan is in research stage for semi-total nonselective control | No significant change |
| Monsanto Agricultural Products Co. | Roundup | Working on tank mixtures that would provide seedling as well as initial control | Up due to higher mowing costs |
| Rhone-Poulenc Chemical Co. | Asulox, Buctril, 2,4-D, MCPA, Visko Rhap | Improved control programs with Asulox under development | Up 2–4% |
| Sandoz, Inc. | NA | Possibility of norflurazon having applications for industrial herbicide use either alone or in combinations | NA |
| Shell Chemical Co. | atrazine | NA | Probably up |
| Uniroyal Chemical Co. | Slo Gro | NA | Stay the same |
| Velsicol Chemical Corp. | Banvel, Brush Buster | Screening of total vegetation management chemicals is an ongoing project; several research projects show utility in this area | Same or slight decline |
| Vertac Chemical Corp. | Weed Rhap, Brush Rhap | NA | Same |
| Vineland Chemical Co., Inc. | monosodium acid methanearsonate, cacodylic acid | Continuing research | Up |

[1]Companies were asked in what direction they felt the sales of chemicals for weed control would go over the next three year period.
[2]NA indicates that information was not available at this time.



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